

Appl. No. 09/831,958  
Amdt. dated April 27, 2004  
Reply to Office Action of January 28, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method for increasing net growth in a plant or seed, the method comprising applying an agent ~~comprising lumichrome~~ to the plant or seed in an amount effective for increasing net growth in the plant, wherein the agent is isolated lumichrome or a microorganism engineered to recombinantly express lumichrome.
2. (Original) The method of claim 1, comprising applying the agent to a root, a shoot, a leaf, or a seed of the plant.
3. (Canceled)
4. (Currently Amended) The method of claim 1 ~~3~~, wherein the microorganism comprises a bacterium.
5. (Original) The method of claim 4, wherein the bacterium is an endophytic bacterium.
6. (Original) The method of claim 4, wherein the bacterium is a root-colonizing or shoot-colonizing bacterium.
7. (Currently Amended) The method of claim 1 ~~3~~, wherein the microorganism is a soil-dwelling bacterium, a soil-dwelling yeast, or a soil-dwelling fungus.
8. (Original) The method of claim 4, wherein the bacterium is from the family *Rhizobiaceae*, a *Rhizobium spp.*, a *Bradyrhizobium spp.*, a *Sinorhizobium spp.* or a *Pseudomonas spp.*

9. (Original) The method of claim 8, wherein the bacterium is a *Sinorhizobium fredii*, a *Sinorhizobium meliloti*, a *Bradyrhizobium japonicum*, or a *Pseudomonas fluorescens*.
10. (Original) The method of claim 4, wherein the bacterium is applied in an aqueous solution in a concentration of about  $10^5$  to about  $10^{10}$  bacteria per mL.
11. (Original) The method of claim 10, wherein the bacterium is applied in an aqueous solution in a concentration of about  $10^7$  to about  $10^8$  bacteria per mL.
12. (Original) The method of claim 4, wherein the bacterium releases lumichrome at a rate of about 0.5 ng lumichrome/day/ $10^7$  cells to about 10 ng lumichrome/day/ $10^7$  cells.
13. (Original) The method of claim 1, wherein said agent thus applied comprises a bacteria culture media.
14. (Original) The method of claim 1, wherein said agent has a lumichrome concentration of about 3 nM to about 50 nM.
15. (Original) The method of claim 1, comprising applying said agent to said plant in multiple applications.
16. (Original) The method of claim 15, comprising applying to said agent to said plant about every 24 to 48 hours.
17. (Original) The method of claim 1, wherein said plant is an angiosperm.
18. (Original) The method of claim 17, wherein said angiosperm selected from the group consisting of monocotyledonous plants and dicotyledonous plants.
19. (Original) The method of claim 18, wherein said dicotyledonous plant is a legume.

PATENT

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20. (Original) The method of claim 19, wherein said legume is alfalfa.

21-75. (Canceled)